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मानक

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IS 1190 (1990): Textile Machinery - Healds twin wire for weaving [TXD 14: Machinery for Fabric Manufacture]



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भारतीय मानक  
वस्त्रादि मशीनरी — वयन के लिए दोहरे तार  
की हील्ड — विशिष्ट

( तीसरा पुनरीक्षण )

*Indian Standard*

TEXTILE MACHINERY — HEALDS, TWIN  
WIRE, FOR WEAVING — SPECIFICATION

( *Third Revision* )

UDC 677·058·12

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BUREAU OF INDIAN STANDARDS  
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NEW DELHI 110002

## FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Machinery for Fabric Manufacture ( Excluding Knitting ) Sectional Committee had been approved by the Textile Division Council.

This standard was originally published in 1969 and revised in 1976. This revision has been taken up to amend the tolerances specified in line with the prevailing manufacturing practices in the country and deleting the requirement of pear shaped end-loops as these are not presently manufactured in the country.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## TEXTILE MACHINERY — HEALDS, TWIN WIRE, FOR WEAVING — SPECIFICATION

( Third Revision )

### 1 SCOPE

**1.1** This standard prescribes requirements for twin wire healds with twisted eyelet or inset mail for weaving (excluding jacquard, fancy and jute weaving).

### 2 REFERENCES

**2.1** The following Indian Standards are the necessary adjuncts to this standard:

IS No.	Title
1521 : 1972	Method for tensile testing of steel wire ( <i>first revision</i> )
2500 (Part 1) : 1973	Inspection by attributes and by count of defects ( <i>first revision</i> )
7904 : 1975	Specification for carbon steel wire rods

### 3 NOMENCLATURE

**3.1** For the purpose of this standard, the nomenclature as indicated in Fig. 1 and 2 shall apply.

### 4 MANUFACTURE

#### 4.1 Material

The wire for manufacture of healds shall be drawn from carbon steel wire rods having

carbon content between 0.35 to 0.65 percent (see IS 7904 : 1975).

**4.1.1** The diameter of wire used for manufacture of healds shall be 0.27, 0.30, 0.40, 0.45, 0.50, 0.56, 0.71, 0.91 or 1.00 mm subject to the following tolerances:

Wire Diameter	Tolerance
Up to 0.55 mm	$\pm 0.01$ mm
Above 0.55 mm	$\pm 0.02$ mm

**4.1.2** The tensile strength of wire in the finished heald state shall not be less than 833 MPa (85 kgf/mm<sup>2</sup>) when tested by the method given in IS 1521 : 1972.

#### 4.2 Workmanship

The inset shall be inserted between the two wires of the heald and the wires shall be tightly wound round inset mail with or without twist as specified in the contract. The plane of the inset mail or twisted eyelet shall be at an angle of  $45 \pm 5^\circ$  to the plane of end loop unless otherwise specified. If the wire heald is held vertically with painted end upward, the minor axis of the heald shall be in the 'Z' direction (see Fig. 3).

The heald shall be perfectly smooth and free from sharp corners so that when the heald is rubbed with glossy silk, the silk shall not get caught at the mail and the wire.

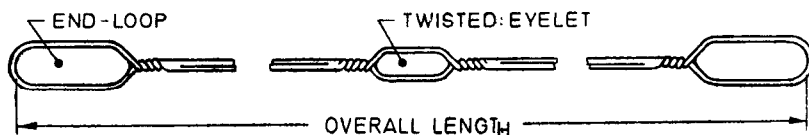


FIG. 1 HEALD WITH OBLONG END LOOP

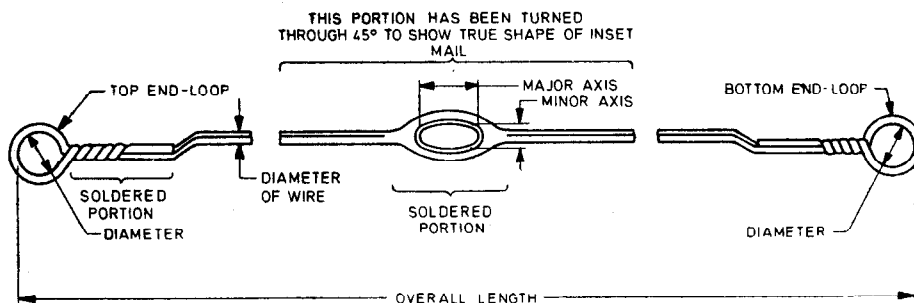


FIG. 2 HEALD WITH ROUND END LOOPS

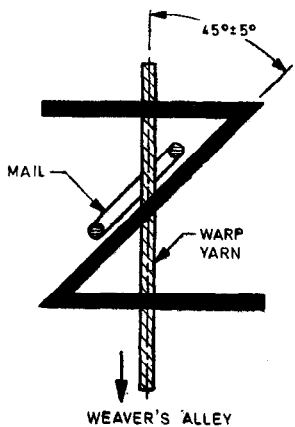


FIG. 3 DIRECTION OF TWIST OF MAIL EYE

4.3 Plating/Soldering

The plating/soldering of healds shall be lustrous, smooth and free from cracks and other flaws which may cause breakage of yarn. The groove formed by two adjoining pieces of wire shall not be filled up by plating.

NOTE — The purity of the tin used for soldering should be preferably as follows:

	<i>Tin Purity Percent</i>
Twisted portions near top and bottom end loops	50
Inset mail or twisted eyelet and the adjoining portions	95

5 DIMENSIONS

5.1 Twisted Eyelet

The twisted eyelet shall be hexagonal with major and minor axis as specified subject to a tolerance of ±0.4 mm and ±0.2 mm respectively.

NOTE — Twisted eyelets with the following major and minor axis are in common use:

- 5 mm × 1.3 mm
- 6 mm × 1.5 mm
- 6.5 mm × 2 mm
- 8 mm × 2.8 mm

5.2 Inset Mails

The major and minor axis of inset mail specified shall be subject to a tolerance of ±0.2 mm.

NOTE — Inset mails with the following major and

minor axis are in common use:

<i>Major Axis mm</i>	<i>Minor Axis mm</i>	<i>*Code No.</i>
2.6	0.9	1010 R
3.2	1.3	1015 R
4.0	1.5	1020 R
5.2	2.3	355 R
5.6	2.7	380 R
6.6	3.9	1080 R
8.0	4.2	390 R
10.0	6.3	450 R

5.3 End Loops

End loops of the healds shall be either round having inside diameter of 6.0, 10.0 or 14.0 mm subject to a tolerance of ± 0.5 mm or oblong having major axis of 16.0 ± 1.0 mm and minor axis of 5.0 ± 0.2 mm.

5.4 Overall Length

The overall length shall be 240, 260, 280, 300, 330, 380, 420, 450, 480 or 520 mm ( unless otherwise specified ) subject to a tolerance of ±1 mm, excluding the wire thickness at the end loops.

6 DESIGNATION

6.1 The twin wire heald shall be designated as follows:

Wire diameter (mm) × length (mm) × end loop type and size (mm) × type of inset mail or twisted eyelets and size (mm).

7 MARKING AND PACKING

7.1 Top end loops shall be distinctly painted to avoid the healds being put on heald bar upside down.

7.2 Preferably 500 wire healds threaded with a cotton yarn of adequate strength shall form a bundle. A unit or more of such bundles shall be packed in suitable waterproof package as specified in the contract.

7.3 Each bundle shall bear a well-secured label indicating name and designation of healds, manufacturer's name/trade-mark, designation ( see 6 ) and the number of healds in it.

7.3.1 The healds may also be marked with the Standard Mark.

8 SAMPLING

8.1 Samples shall be drawn in accordance with the double sampling plan given in Table 3 of IS 2500 ( Part 1 ) : 1973 at Inspection Level III and 2.5 percent AQL.

\*Given for information only.

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